

A NEW *VALVATA* FROM THE PLEISTOCENE OF SOUTHERN ILLINOIS

A. Byron Leonard

Division of Biological Sciences
 The University of Kansas
 Lawrence, Kansas 66044

ABSTRACT

Valvata salina Leonard (*Prosobranchia: Valvatidae*), a new Pleistocene, Wisconsinan Stage species, is described from the Saline River banks near Equality, Gallatin Co., Illinois. It differs from *V. tricarinata* (Say) in being more planoid, having a low spire and a proportionately larger umbilicus.

The Saline River and its tributaries comprise a drainage system of limited extent in southeastern Illinois; the river arises no farther north than Hamilton County, and enters the Ohio River in northeastern Hardin County, an air-line distance of little more than 60 miles. Especially in Saline and Gallatin counties, the Saline River and its immediate

tributaries are entrenched in sediments of late Pleistocene Lake Saline (Willman and Frye, 1970, Fig. 9, p. 34); artificial deepening, straightening and cleaning of the channel by heavy earthmoving equipment has produced many clean exposures of the ancient lake sediments up to heights of 35 or more feet at low water stages of the river, although the

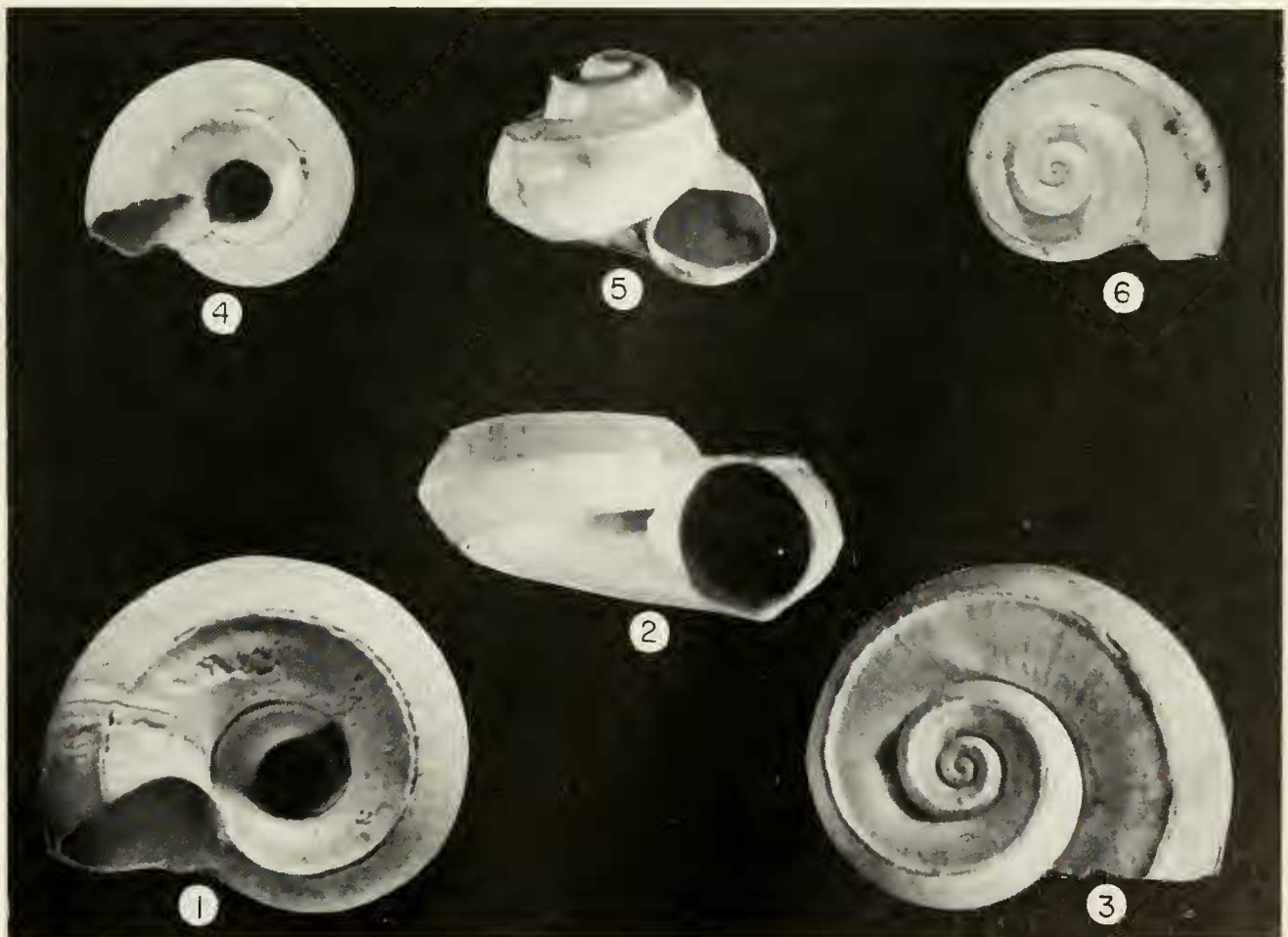


FIG. 1, 2, 3: umbilical, apertural and spiral views of holotype of *Valvata salina*, n. sp. Corresponding views of an associated example of *V. tricarinata* are shown in figures 4, 5, and 6. All figures approximately x 6.

total thickness of the lake beds ranges upward to approximately 150 feet. In the course of studying the molluscan faunas in the fossiliferous clays and silts thus made available, an hitherto unknown member of *Valvata*, a genus of branchiate gastropods, was discovered. Inasmuch as the shells do not intergrade in their distinguishing characters with those of *Valvata tricarinata* (Say) with which they occur, the shells are described as a new species.

Valvata salina n. sp.

Figs. 1, 2, 3

Diagnosis: Shells possessing the general characteristics of the genus *Valvata*, and resembling in many respects *Valvata tricarinata* (Say) from which it differs, however, in the following important features: consistently greater size; more planoid form; relatively larger umbilical opening; and lack of spiral sculpture.

Description of holotypes: Shell forming a helicoid spiral, whorls $3\frac{3}{4}$ in number; spire depressed below general upper surface; nucleus of $1\frac{1}{2}$ rounded whorls bearing granular sculpture; remaining whorls increasing rapidly and uniformly in diameter toward the aperture, where the last whorl descends slightly; whorls robust, tricarinate as in typical *V. tricarinata*, except that the peripheral carina is reduced to nothing more than a distinct angulation, and bearing obvious but not conspicuous diagonally transverse striations; spiral sculpture lacking on the whorls; aperture round, entire, and cemented to the penultimate whorls below the angle of the peripheral carina; operculum not known; umbilicus relatively broad, narrowing above, but exposing all the whorls to the nucleus. Measurements: greater diameter of shell, 6.9 mm; lesser diameter, 5.5 mm; height of shell, 2.8 mm; diameter of umbilicus, 2.1 mm; diameter of aperture, 1.6 mm.

Type locality: Equality Northeast Section, in the NW $\frac{1}{4}$, NE $\frac{1}{4}$, NW $\frac{1}{4}$ sec. 16, T 9 S, R 8 E, Gallatin County, Illinois. The fossiliferous exposure is in the

right bank of the Saline River, about a mile northeast of the village of Equality.

Geological horizon: Equality Formation (Willman and Frye, 1970, p. 72), Woodfordian substage of the Wisconsinan Stage of the Pleistocene Series.

Types: The holotype, and paratypes from the type locality and from two other localities exposed in Lake Saline sediments, are on deposit in the paleontological collections of the Illinois State Geological Survey.

Comparisons: At each of the three localities from which *Valvata salina* was recovered, it occurred with *V. tricarinata*, as well as with about 20 other molluscan species, several kinds of ostracods, seeds of vascular plants and nucules of *Chara* and *Nitella*. The greater diameter of the shells of *V. salina* varies between 6.0 and 7.5 mm, while that of the associated shells of *V. tricarinata* ranges from 4.6 mm to 5.0 mm. The planoid form of *V. salina* is exemplified by the relation between greater diameter and the height of the shells; the height compares only 40 to 45 per cent of the greater diameter, while in *V. tricarinata* from the same deposits the corresponding range is between 75 and 82 per cent. In shells of *V. salina*, the diameter of the umbilicus comprises from 31 to 34 per cent of the greater diameter of the shells, while in *V. tricarinata* the diameter of the umbilicus represents only 17 to 19 per cent of the greater diameter. These data confirm the earlier statement that *Valvata salina* is not only consistently larger than examples of *V. tricarinata* which occur with it, but also that it also differs from the latter in being much more planoid, and in having a relatively broader umbilicus.

LITERATURE CITED

- Willman, H. B. and J. C. Frye 1970. Pleistocene stratigraphy of Illinois. Illinois State Geol. Surv. Bull. 94. 204 pp. 14 figs. 7 tables. 3 pls. (in pocket).